Izuka Ikedionwu

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EDUCATION

Master of Science in Electrical & Computer Engineering | 2026 | Baylor University
Bachelor of Science in Electrical & Computer Engineering | 2025 | Baylor University

- Minors in Computer Science and Mathematics, VP of Computing for Compassion, Baylor Master Tutor

Relevant Coursework: RF/Microwave Circuits, Antennas, Electronics, Embedded Systems, Advanced Digital Logic, Computer Organization, Data Structures & Algorithms, Circuits

EXPERIENCE

SPACE EXPLORATION TECHNOLOGIES (SPACEX) — Spring & Summer 2024

Starlink Hardware Design Engineer | Data & Control Systems Engineer

- Led $4 million cost savings project designing analog & power electronics TX/RX transient stability, output ripple, and control loop stability, and efficiency benchtop tests over temperature range for various voltage regulators powering modem SOC
- Integrated next-gen DDR4 and eMMC modules into embedded phased array antenna hardware system
- Reduced rocket booster transportation time by 66% by integrating motor control and analog strain gauge sensor with LabVIEW GUI streamlining data acquisition and monitoring
- Managed $8k industrial panel box project designing and installing DIN rail modules and used CAD for steel battery holder
- Performed root cause failure analysis using automated test setups on GNSS boot time problems, optimizing antenna test setups using Linux/bash, microcontrollers, automated lab equipment, and networking hardware for system reliability
- Shipped software that tested and validated 300 pressure sensor interface circuits and power supply modules for critical rocket engine tests

LOCKHEED MARTIN-SPACE — Summer 2023

Embedded Systems Engineer

- Implemented SERDES RTL for multi-FPGA communications up to 1.4 GHz for high-reliability space telemetry applications
- Prototyped multi-FPGA benchtop testing in Python and SystemVerilog to validate design, integrating program-controlled oscilloscope, spectrum analyzer, power supply, multimeter, and signal generator

NON-VON, LLC (Dartmouth University Research AI Inference Start-Up) — Summer 2025

Edge Systems Hardware Engineer

- Designed 6-layer FPGA + MCU schematic and layout for drone-mounted AI vision with HDMI, Ethernet, SD, and M2 interface Increasing power capacity by 33%, cutting board area 34%, and reducing cost by 20%
- Validate 6-Layer PCB designing and executing test plans automating test equipment and analyzing data for system reliability

PROJECTS

BAYLOR LIQUID ROCKET ENGINE TEAM (Link) — Spring 2023-Spring 2025

Lead Electrical Engineer

- Led a 4-person team from concept to testing of software, electronics, and instrumentation for 2 liquid rocket engines
- Developed electronics stack and performed characterization with 7 sensor modules, mixed-signal interfaces, load switches, and DC/DC converters for rocket engine testing
- Wrote C++ and Python code for Wi-Fi, BLE, ADCs, DACs, EEPROM, UART, and SPI in Linux and Bare-Metal Systems

FPGA-Based ARM Processor (Link) — Fall 2024

- Wrote RTL in SystemVerilog for a 64-Bit, 5-Stage pipelined, ARM processor that can execute 32 instructions
- Programmed an assembler and UART interface in python and UART interface on FPGA to receive LEGv8 instructions
- Implemented a memory controller interface to read/write to and from on board DDR2 hardware

SKILLS

Hardware:

• MCUs, FPGAs, DC/DC & AC/DC Converters, Sensors (Pressure, Force, Temperature, Current), ADCs/DACs, PCB schematic/layout, Load Switches, Electric Motors, HW Validation, Computer Architecture, Digital Communication

Software:

- C/C++, Python, SystemVerilog, ADS, FreeRTOS, MATLAB/Simulink, Linux, Altium, KiCad, Git, Vivado, NX Siemens